

## Examining the Impact of Knowledge Sharing on Malaysia's Manufacturing Sector's Competitive Advantage

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### Abstract

The present research was an exploratory investigation aimed at examining the impact of tacit and explicit knowledge sharing on the competitive advantage of manufacturing firms operating in Malaysia. The findings revealed that the study supports positive relationships between tacit and explicit knowledge sharing and competitive advantage (i.e., cost, quality, delivery, and flexibility), which is consistent with earlier research. The present study investigated the relationships between tacit and explicit knowledge sharing and competitive advantage, as these constructs have been identified as one of the most extensively researched topics since the inception of organizational theory. However, this study's findings indicate that there is no significant relationship between tacit knowledge sharing and the variables of quality and flexibility that determine competitive advantage. This study employed a quantitative methodology utilizing a self-administered questionnaire. The study aims to provide insights into the significance of tacit and explicit knowledge as the primary elements of knowledge sharing, and a crucial prerequisite for enhancing a manufacturing firm's competitive advantage. Using Partial Least Squares structural equation modelling, 198 manufacturing company samples were collected and analyzed. As a result, the current study has the potential to correctly describe the performance of Malaysian manufacturing firms and it is thought to give a credible depiction of their current situation.

**Keywords:** Competitive Advantage, Tacit and Explicit Knowledge, Manufacturing Firm.

### Introduction

Since the 1990s, Malaysia has transitioned from an industrial era to a knowledge-based economy in the informational era, resulting in significant economic growth. According to the Department of Statistics Malaysia (2022), the economy and Gross Domestic Product (GDP)

growth in Malaysia for the year 2022 were primarily propelled by the services, manufacturing, and agriculture sectors, despite the adverse effects of the COVID-19 pandemic on the Malaysian economy. According to the data presented in Table 1.1, the manufacturing sector in Malaysia has made a significant contribution of RM135.3 billion, which accounts for 14.5 percent of the total sectors in the country. (Department of Statistics Malaysia, 2022). As in September 2022, the number of workers employed in the manufacturing industry amounted 2,231,406. In the year 2022, the total amount of salaries and wages disbursed was RM7,478.8 million. The average remuneration per employee was recorded at RM3,351.60. The manufacturing sector in Malaysia has achieved a sales value per employee of RM60,645. (Department of Statistics Malaysia, 2022). The Eleventh Malaysia Plan, also known as RMK-11, has set a goal of achieving an annual GDP growth rate ranging from 4.3 to 4.8 percent in 2020. This comes in comparison to the 4.3 percent or RM1,421.5 billion GDP recorded in 2019. The main contributors of this growth are expected to be the services and manufacturing sectors. (Economic Planning Unit, 2020).

Table 1

*The Contribution of Malaysia's Manufacturing Sector (For the Year of September 2021)*

<b>Gross Domestic Product (GDP)</b>	RM135.3 billion (14.5%)
<b>Total Employees</b>	2,231,406 persons
<b>Salaries and Wages per Employee</b>	RM7,478.8 million
<b>Average Salaries and Wages per Employee</b>	RM3,351.60
<b>Sales Value per Employee</b>	RM60,645

Source: Department of Statistics Malaysia (2022)

The topics of competitive advantage and capabilities have been extensively discussed in the field of strategic research for several decades, primarily concerning commercial enterprises (Chan et al., 2017; Brundage et al., 2016; Lin & Wu, 2014). Enterprises that are driven by the rise in market rivalry and advancements in information technology have the responsibility to measure, evaluate, and enhance their competitive capabilities and performance across their production processes, but also to enable new technology and product creation to achieve economic benefits and maintain a viable competitive advantage (Dangelico et al., 2017). Recent years have seen a growing interest in researching the relationship between tacit and explicit knowledge sharing (Wang et al., 2017; Allameh et al., 2014; Alwis & Hartmann, 2008) and its impact on competitive advantage for both practical and theoretical circles worldwide (Fainshmidt et al., 2019; Agha et al., 2012; Bataineh & Al Zoabi, 2011; Adams & Lamont, 2003). However, the majority of these fields have been examined independently and have yielded inconsistent outcomes.

It is indisputable that the extent to which an organization is able to align its organizational capabilities and resources with strategic goals is a significant factor in determining its ability to develop a competitive advantage (Gao et al., 2021; Hitt et al., 2007; Teece et al., 1997). These strategic goals may be enhanced by establishing the roles and duties of senior management, the key challenges impacting organizational effectiveness, and the actions that will affect the organization in the long run (Robbins & Judge, 2019; Nonaka & Takeuchi, 2018). The topics of knowledge sharing and competitive advantage have been at the forefront of strategy study for several decades and contain the vast majority of the other questions that have been debated in the subject, such as why companies are unique, how they act, how they select strategies, and how they are managed (Cabrera et al., 2022; Cabrera

et al., 2017; Argote, 2013). This is because the issues of knowledge sharing and competitive advantage are directly related to how well an organization does its missions (Joo & Park, 2021; Davenport & Prusak, 2013; Porter, 1990). The favorable influence that having knowledge sharing and management have on competitive advantage has been well-defined in the existing body of research. This is because having a competitive advantage equips a company with the resources necessary to beat its competitors (Cabrera et al., 2022; Robbins & Judge, 2019; Cabrera et al., 2017; Davenport & Prusak, 2013).

This research examines the relationships between competitive advantage and tacit and explicit knowledge sharing. The two aforementioned knowledge concepts have been identified as highly researched topics since the inception of organizational theory (Alwis & Hartmann, 2008; Balconi, Pozzali & Viale, 2007; Ancori, Bureth & Cohendet, 2000). However, there is a significant debate regarding the precise definition and implementation methods of tacit and explicit knowledge sharing to achieve sustainable competitive advantage and enhance firms' performance over the long term (Park et al., 2015; Allameh *et al.*, 2014; Bhuiyan, 2011). The objective of this study was to examine the sharing of tacit and explicit knowledge as a key strategic resource for achieving sustainability, with the aim of offering many potential solutions to the current state of the business environment (Cabrera et al., 2022; Robbins & Judge, 2019; Nonaka & Takeuchi, 2018; Alwis & Hartmann, 2008).

### **Literature Review**

Malaysia's economic expansion relies on its natural resource richness, yet this growth has had significant environmental and human consequences. Malaysia has yet to reach Sustainable Development Goals (SDGs) objectives for competitive and sustainable development (The Asia Foundation, 2022). Manufacturing firms in Malaysia are reluctant to improve their competitiveness owing to high implementation costs (Abdullah et al., 2021; Anuar, 2021). Other scholars have found a lack of competitive capabilities in resource management and materials, insufficient skilled and experienced labor, and a lack of innovation and efficiency in their production systems as reasons not to improve their competitive capabilities (Chandra & Gogoi, 2021; Abdul-Rashid, Sakundarini, Ghazilla & Thurasamy, 2017; Asada, Nixon & Koen, 2017; Nagulendran, Padfield & Campos-Arceiz, 2016). Previous research have shown that firms that fail to share information inside or outside their organizations may hinder sustained competitive advantage (Abdullah et al., 2021; Anuar et al., 2021; Tarofder et al., 2017; Omar et al., 2016).

Malaysia is striving to achieve the fourth Industrial Revolution (IR 4.0). In pursuit of this goal, businesses and companies are actively seeking to capitalize on the availability of financial resources, incentives, and modern infrastructure. By doing so, they aim to optimize their cost management practices and diversify their business strategies through the implementation of digitalization. This approach is intended to enable these entities to effectively capture the significant market demands that exist within this context (Lee, 2020; Zahiid, 2019). Despite the promotional incentives and support provided by the Malaysian government, manufacturing firms in Malaysia are encountering formidable competition from neighbouring partners such as China, India, and Vietnam. Malaysia's industrial sector has demonstrated strength in specific domains, including petrochemicals, electrical and electronic manufacturing, and agricultural-based products. However, the country has yet to attain developed industrial status due to inadequate emphasis on innovation, automation, digitization, and technology, as pointed out by Lee (2020), Mohamad and Mulok (2020), and Tang (2018).

Competitive capabilities are viewed as significant intangible assets for organizations these days (Barletta, Berlina, Despeisse, Van Voorthuysen & Johanssona, 2018; Ferrer-Lorenzo, Abella-Garcés & Maza-Rubio, 2018; Gold, Schodl & Reiner, 2017; Saeidi, Sofian, Saeidi, Saeidi & Saeidi, 2015). Simultaneously, they have been acknowledged to be important to all production processes. Meanwhile, they are widely recognized for maintaining operations in order for these manufacturing firms to develop their abilities, technologies, and work practices (Gold et al., 2017; Jabbour, Jugend, Jabbour, Gunasekaran, & Latan, 2015; Longoni & Cagliano, 2015). The competitive advantage and knowledge-based view theories, in essence, are influential theoretical foundations that help to explain why organizations perform differently than others (Barney & Clark, 2007; Felin & Hesterly, 2007; Priem & Butler, 2001; Grant, 1996; Barney, 1991; Porter, 1985). The concept of competitive capabilities is applicable for organizations because it clearly reflects on manufacturing firms nowadays to integrate processes for measuring, assessing, and improving their manufacturing performance throughout their operations, while simultaneously developing new products and technologies that maximize profits (Lin & Tseng, 2016; Karimi & Rafiee, 2014; Peng, Schroeder, & Shah, 2011). Competitive capabilities are defined as the collective abilities, skills, and expertise to develop competitive strategies to increase an organization's performance over competitors (Cabrera et al., 2022; McEvily & Zaheer, 1999), as well as ensuring that manufacturing processes and products are produced in a sustainable, knowledgeable, and competitive manner for all work functions (Hung, Hung, & Lin, 2015).

This study investigates the relationship between tacit and explicit knowledge sharing and competitive advantage in the manufacturing sector of Malaysia. The three aforementioned terms of knowledge have been subject to extensive research since the inception of organizational theory, as evidenced by the works of Alwis and Hartmann (2008), Balconi, Pozzali, and Viale (2007), and Ancori, Bureth, and Cohendet (2000). Although there is some agreement, that remains significant debate regarding the definition and implementation of tacit and explicit knowledge sharing in order to achieve sustained competitive advantage and enhance the performance of firms (Park, Vertinsky & Becerra, 2015; Allameh et al., 2014; Bhuiyan, 2011). The act of sharing knowledge in a clear and direct manner is commonly referred to as explicit knowledge sharing, which involves the exchange of crucial information among members of an organization through either written or verbal communication process (Anuar et al., 2021; Kogut & Zander, 1993). On the other hand, tacit knowledge sharing pertains to the behaviour and ability of individuals to impart their knowledge and apply the insights they acquire. According to Hejase, Haddad, Hamdar, Hejase, and Beyrouti (2014), individuals can obtain non-codified knowledge through their personal experiences and observations. Consequently, the act of knowledge sharing requires the possession of adequate knowledge and opportunities to disseminate information.

Therefore, limited scholarly literature has been dedicated to exploring the impact of linkages on the research objectives of this study, which aim to investigate the relationship between knowledge sharing and competitive advantage in the context of manufacturing firms operating in Malaysia. This study's variables and findings have been reviewed, analyzed, and discussed, and can serve as a useful reference for future research. The present study not only examined the relationship between tacit and explicit knowledge sharing and competitive advantage, that includes cost, quality, delivery, and flexibility, but also furnished potential resolutions as directives for academics and professionals. Consequently, this study serves as a valuable directive and suggestion for enhancing and attaining a competitive advantage among manufacturing firms in Malaysia.

This study provides evidence from previous research that the theory of Knowledge-based View (KBV) can justify how organizations use their limited organizational resources to generate value-creating capabilities or competencies in order to sustain longer in competitive markets (Nieves, Quintana, & Osorio, 2014; Mills, Platts, & Bourne, 2003). It is emphasizing information-based resources in particular, which give a limitless source of viable solutions and know-how that can be used to utilize and extend the organization's product life cycle and deliver environmental value to society. It also generates information capable of closing gaps in manufacturing issues (e.g., waste usage, negative environmental impacts, and higher manufacturing costs) as well as knowledge about production site peculiarities through tacit and explicit knowledge sharing with the aim to gain a sustainable competitive advantage (Oyemomi, Liu, Neaga, & Alkhurajji 2016; Wang & Wang, 2012). The knowledge-based view (KBV) theory has become the most cited and influential theory as a theoretical foundation while researching issues of competitive advantage among organizations, particularly the manufacturing sector in Malaysia (Breznik & Lahovnik, 2016; Rehman, Ilyas & Asghar, 2015; Barney, 1991, 2014; Tocan, 2012; Agha et al., 2012; Barney & Clark, 2007; Argote & Ingram, 2000). As a result, the knowledge-based view theory is ideally fit to be applied as the primary underlying theory of this study, and the study's findings are supported by this theory.

### Methodology

The proposed research framework is shown in Figure 1. A cross-sectional survey was conducted as part of the quantitative approach applied in this study to look into the relationships between tacit and explicit knowledge sharing and competitive advantage. The unit of analysis was organization because Malaysian manufacturing firms have substantial sales value, production facilities, and labour forces (Malaysian Investment Development Authority, 2020). 198 samples were chosen at random from a disproportionate stratified sample of the Federation of Malaysian Manufacturers (FMM) Directory. Due to their decision-making abilities, capacity to act on behalf of the company, and manage of the entire organization's manufacturing production and process, production managers were chosen and required to respond to the questionnaire as representatives of manufacturing enterprises. The Partial Least Square Structural Equation Modelling (PLS-SEM) was used to process data analysis of measurement and structural models, and the IBM Statistical Package for Social Science (SPSS) version 23 was applied for data entry.

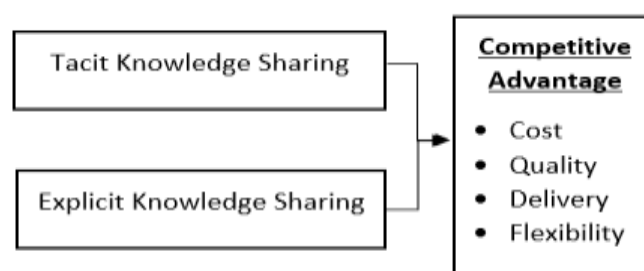


Figure 1. Theoretical Framework (Wang and Wang, 2012; Jabbour, Da Silva, Paiva and Santos, 2012; Boyer and Lewis, 2002).

### Results

Among the 198 respondents, it was found that 85.7% of the manufacturing firms were fully owned by Malaysian citizens, while 10% were owned through a joint venture between Malaysians and foreign businesses. The remaining 4.3% of the firms were fully owned by

foreign corporations. In Malaysia's manufacturing industry, 68.8% of the businesses were established for more than ten years. Most of the manufacturing firms (81%) had 100 or fewer employees, while just 14.2 percent had between 101 and 500 employees, and another 3.8 percent had between 501 and 1000 employees.

The Malaysian Investment Development Authority (2020) identified a total of 20 different manufacturing sub-sectors. Of these, the petroleum products (including petrochemicals) sector contributed 2.6 percent of the total responses. Eight responders (5.3%) came from the electronics and electrical sector. It received 14 responses with a response rate of 9.5 percent for the sector of basic metal products. 9.5% from the transport equipment sector, 0.7% from natural gas, 16.8% from the food manufacturing sub-sector, 3.8% from chemical and chemical products, 5% from non-metallic mineral products, 8.3% from rubber products, 13.8% from plastic products, 9.5% from machinery and equipment, 8.3% from fabricated metal products, 8.5% from textiles and textile products, 13.6% from paper, printing and publishing, and 6.8% from textiles and textile products. There were no samples obtained for the sectors of scientific and measuring equipment, as well as wood and wood products.

Validity and reliability (CR) were analyzed using cross-loadings, average variance extracted (AVE), and composite reliability, as shown in Table 3. All of the Average Variance Extracted (AVE) values exceeded the threshold of 0.5, and all of the Composite Reliability (CR) values exceeded the minimum acceptable level of 0.7. The findings presented in Table 3 indicate that all construct loadings satisfied the established criterion and showed a strong relationship with their corresponding constructs. Chin's redundancy analysis was used to validate the formative measures of this study's convergent validity (Chin, 1998). As shown in Table 4, the path coefficients for the formative constructs of cost, quality, delivery, and flexibility are 0.662, 0.745, 0.747, and 0.666, respectively. According to Hair, Hult, Ringle, and Sarstedt (2014), path coefficients greater than 0.60 are acceptable if the research is exploratory. As a result, the formative assessed constructs have strong convergent validity.

Table 3

*Results of Reliability – Loadings, Average Variance Extracted and Composite Reliability*

Construct	Item	Loadings	AVE	CR
Tacit Knowledge Sharing	T1	0.875	0.668	0.834
	T2	0.813		
	T3	0.828		
	T4	0.782		
	T5	0.809		
	T6	0.831		
	T7	0.794		
Explicit Knowledge Sharing	E1	0.815	0.654	0.886
	E2	0.835		
	E3	0.834		
	E4	0.783		
	E5	0.766		
	E6	0.799		
Cost	C1	0.824	0.662	0.887
	C2	0.788		
	C3	0.834		
	C4	0.808		
Quality	Q1	0.898	0.745	0.868
	Q2	0.826		
	Q3	0.864		
Delivery	D1	0.887	0.747	0.898
	D2	0.821		
	D3	0.884		
Flexibility	F1	0.852	0.666	0.893
	F2	0.834		
	F3	0.804		
	F4	0.781		
	F5	0.821		
	F6	0.801		

Table 4  
Assessment for Formative Measurement

Construct	Indicator	Convergent Validity	Weight	t-Value	VIF
Cost	C1	0.750	0.414	2.927	1.971
	C2		0.356	2.641	2.051
	C3		0.381	2.316	2.105
	C4		0.369	2.320	2.020
Quality	Q1	0.773	0.415	3.372	2.680
	Q2		0.369	3.404	2.782
	Q3		0.425	3.227	2.599
Delivery	D1	0.815	0.461	2.847	2.255
	D2		0.505	2.810	2.646
	D3		0.474	2.644	2.423
Flexibility	F1	0.704	0.324	2.166	1.903
	F2		0.286	1.995	2.081
	F3		0.281	2.365	2.167
	F4		0.319	2.072	2.207
	F5		0.305	2.187	1.879
	F6		0.314	2.121	1.933

This study assessed the discriminant validity. Table 5 shows that the AVE value of each construct exceeds the values in its corresponding row and column, thus implying that all constructs have satisfied the criterion of discriminant validity. When the evaluation of the measurement model is complete, the structural model is then analyzed. A bootstrapping technique of 500 resamples was applied to generate t-values for the constructs, as shown in Table 6. The coefficient of determination ( $R^2$ ) is used to evaluate the predictive accuracy within the sample. The  $R^2$  coefficients for cost, quality, delivery, and flexibility are 0.878, 0.845, 0.762, and 0.876, respectively. These values exceed the threshold of 0.75, which Cohen (1988) has recommended as indicative of substantial models.

Table 5  
*Discriminant Validity*

Construct	Explicit KS	Cost	Quality	Delivery	Flexibility	Tacit KS
Explicit KS	<b>0.802</b>					
Cost	0.769	<b>0.814</b>				
Quality	0.791	0.762	<b>0.863</b>			
Delivery	0.749	0.799	0.800	<b>0.864</b>		
Flexibility	0.784	0.770	0.793	0.784	<b>0.816</b>	
Tacit KS	0.756	0.758	0.769	0.759	0.787	<b>0.818</b>

*Note: Diagonals represent the square root of the AVE while the off-diagonals represent the correlations*

Table 6 presents the results of hypothesis testing, indicating that six hypotheses (H1, H3, H5, H6, H7, and H8) result that tacit knowledge sharing has a favorable effect on cost and delivery, while explicit knowledge sharing has a beneficial impact on cost, quality, delivery, and flexibility. For hypotheses H2 and H4, the findings indicate that there is no statistically significant relationship between the sharing of tacit knowledge and the effect of a



competitive advantage in terms of quality and flexibility. The statistical analysis reveals that the  $\beta$  coefficient for tacit knowledge sharing towards quality is 0.127, with an equivalent t-value of 0.972. Similarly, the  $\beta$  coefficient for tacit knowledge sharing towards flexibility is -0.074, with an equivalent t-value of 0.188. However, both of these coefficients are deemed insignificant. Consequently, the hypotheses are unsupported.

Table 6

*Hypothesis Testing*

Hypo	Relationship	Std Beta	Std Error	t-Value	BCI LL	BCI UL	Decision	f <sup>2</sup>
H1	Tacit KS -> Cost	0.316	0.108	2.927*	0.192	0.628	Supported	0.285
H2	Tacit KS -> Quality	0.127	0.131	0.972	0.098	0.210	Unsupported	0.013
H3	Tacit KS -> Delivery	0.395	0.202	2.664*	0.123	0.637	Supported	0.170
H4	Tacit KS -> Flexibility	-0.074	0.020	0.188	0.148	0.218	Unsupported	0.001
H5	Explicit KS -> Cost	0.637	0.107	5.948*	0.428	0.852	Supported	0.406
H6	Explicit KS -> Quality	0.800	0.126	6.348*	0.436	0.823	Supported	0.437
H7	Explicit KS -> Delivery	0.593	0.181	3.275*	0.278	0.974	Supported	0.212
H8	Explicit KS -> Flexibility	0.957	0.111	8.632*	0.540	0.973	Supported	0.592

Note: \*\* $p < 0.01$ , \* $p < 0.05$

**Discussion**

The study revealed that Malaysian manufacturing firms are implementing or utilizing four competitive advantage dimensions. According to scholarly sources (Ocampo et al., 2017; Jabbour et al., 2012; Boyer & Lewis, 2002), quality, cost, delivery, and flexibility are identified as the primary factors that have the potential to enhance the efficacy and efficiency of manufacturing processes. The present study found a favorable relationship between tacit knowledge sharing and cost and delivery of the competitive advantage. Additionally, a positive relationship has been analyzed between explicit knowledge sharing and competitive advantage, encompassing cost, quality, delivery, and flexibility. In general, hypotheses H1, H3, H5, H6, H7, and H8 have been determined to be supported, resulting in a total of six out of eight hypotheses being supported.

This study found a positive relationship between tacit knowledge sharing and cost (Hypothesis 1), which is consistent with prior research (Johnson, Fletcher, Baker, and Charles, 2019; Mohajan, 2016; Cheng et al., 2008). Johnson et al (2019); Mohajan (2016) found that effective tacit knowledge sharing practices could reduce manufacturing costs and strive for effective cost-leadership strategies, which ultimately lead to competitive advantage, such as the ability to differentiate and command a premium price that exceeds the additional cost of doing so. Developing tacit knowledge sharing practices is essential for manufacturing firms to

cultivate competitive capabilities (such as cost, quality, delivery, and flexibility) and leverage organizational resources to sustain competitive advantage (Beske et al., 2014; Cheng et al., 2008; Sharkie, 2003).

Regarding the relationship between tacit knowledge sharing and quality, this relationship is found to be unsupported. Therefore, hypothesis H2 is not supported. Table 6 indicates that firms with a tacit knowledge sharing practice are less likely to develop production quality. In other words, tacit knowledge sharing practices such as receiving new knowledge from workers' experiences, expertise, and sharing lessons from past failures may be ineffective when a company develops a continuously improving production process and a reliable quality product (Seidler-de Alwis & Hartmann, 2008; Seidler-de Alwis et al., 2004). In contrast, firms that develop explicit knowledge sharing (which refers to codifying existing organizational knowledge sources into a system to ensure that employees correctly understand, share, and reuse the knowledge) tend to have effective production and product quality (Lee et al., 2010; Liao et al., 2010; Wang & Wang, 2012).

The supported direct relationship of hypothesis H3 is consistent with Lin and Tseng (2016); Hung et al (2015); Boyer and Lewis (2002), which found that tacit knowledge sharing strengthens the firm's core competencies and competitive advantage. For instance, share knowledge on improving the delivery process so the company can quickly target new groups of customers and identify viable emerging opportunities (Lukito et al., 2016; López-Gamero et al., 2009), respond to rapid changes (Beck & Lengnick-Hall, 2016; Zhou & Wu, 2010), and deliver on time (Nadkarni & Narayanan, 2007; Fredericks, 2005). To increase knowledge creation and information utilization decisions, effective competitive advantage must be incorporated. Thus, this study advises Malaysian manufacturers to strengthen their competitive advantage and organizational capabilities, particularly delivery, flexibility, quality, and cost, to internationalize.

As shown in Table 6, the unsupported relationship of hypothesis H4 showed that Malaysian manufacturing firms had low tacit knowledge sharing and operations flexibility, resulting in manufacturing delays and incapacity to compete in the same industry. This analysis shows that the firm's managerial staffs lack of knowledge sharing practices and training to execute, implement, and monitor the entire manufacturing process and operations (Pambreni et al., 2019; Ahmed et al., 2017). As Rosenfeld (2017); Schonberger (2010); Gunasekaran and Sarhadi (1998) justified that employee education and training can increase tacit knowledge sharing initiative flexibility and involvement. Quality-based workers with expertise and skills can organize, guide, and regulate manufacturing processes and make better judgements (Rosenfeld, 2017; Sidin & Sham, 2015). This study indicates that managers speed up and adapt their production systems to optimize product line expansion, cost efficiency, and market response (Gold et al., 2017; Ferdows et al., 2016).

Hypothesis H5 has been found to have a supported relationship. The proposed hypothesis of the study posits that there exists a positive and significant relationship between explicit knowledge sharing and cost among manufacturing companies in Malaysia. The aforementioned outcome provides supporting proof for prior research that stated the notion that the sharing of explicit knowledge facilitates convenient retrieval of specialized skills and knowledge, whether it is documented formally or resides within an individual's cognitive foundation. The authors of Park et al (2015); Huang et al (2011) have elucidated that explicit knowledge sharing can promote collaboration, ongoing learning, and enhancements in cost and quality. According to Huang et al (2014), the establishment of a solid foundation for decision-making strategies that are both cost-effective and of high quality is crucial. This foundation also ensures that the value, contribution, effectiveness, and exploitation of

intellectual assets are comprehensively absorbed. This study provides evidence of a relationship between explicit knowledge sharing and cost management in the manufacturing sector of Malaysia. The findings suggest that the adoption of an explicit knowledge sharing management system could optimize organizational resources, resulting in cost reductions and improved overall performance and competitive advantage for companies (Hooshyar, 2010).

The supported relationship of hypothesis H6 is consistent with previous studies, such as Venkitachalam and Willmott (2016); Kumar and Ganesh (2011), which found a significant positive relationship between explicit knowledge sharing and quality. According to Kumar and Ganesh (2011), the codification strategy entails extracting explicit knowledge from the creator, preserving it in databases, and encouraging its reuse by whoever needs it. This study confirmed that Malaysian manufacturing companies practice explicit knowledge sharing and quality enhancement with regard to product and process quality. Effective explicit knowledge sharing management could be found among Malaysian businesses as a result of the Human Resources Development Fund's (HRDF) training and development initiative (Kah et al., 2018; Khoo et al., 2018).

Next, the findings indicate a significant positive relationship between explicit knowledge sharing and delivery (H7) within the manufacturing sector of Malaysia, thereby indicating that the hypothesis is supported. Magnier-Watanabe and Benton (2017) and Park et al (2015) have elaborated on the significance of explicit knowledge sharing in the objectivist knowledge management processes of codification and control. This naturally underscores the crucial role of information technology in developing efficient delivery processes and solutions within an organization. The authors of Timilsina et al (2016); Prester (2013); Peng et al (2011) provided further justification that the proficient and productive utilization of explicit knowledge sharing practices and delivery strategies can result in enhanced customer and employee satisfaction, and consequently, greater financial gains for companies. The relationship between explicit knowledge sharing and delivery capability has been found to be an essential point of reference for manufacturing firms in Malaysia in terms of their effectiveness.

Lastly, this study's Hypothesis H8 was supported, indicating that there is a significant positive relationship between explicit knowledge sharing and flexibility among Malaysia's manufacturing firms (Yi et al., 2017; Wang & Wang, 2012; Alwis & Hartmann, 2008) all agreed that that good performance could be enhanced via the use of explicit knowledge sharing within flexible organizations in order to adapt to and react swiftly to changes in the external environment. In addition, Calik and Bardudeen (2016); Teece et al (2016) have explained that using the dynamic capabilities theory, explicit knowledge sharing is a significant factor in the flexibility and competitiveness of organizational structures. Consequently, this study supports this hypothesis (H8) based on the literature support and evidence that manufacturing companies in Malaysia need to emphasize the practices of explicit knowledge sharing and flexibility capability.

## **Conclusion**

The analyses of this study yielded positive results, though not all were statistically significant. Literature definitely supports the hypothesis that Malaysian manufacturing firms that engage in tacit and explicit knowledge sharing will gain a substantial competitive advantage. In addition, the theory of knowledge-based view (KBV) could provide a firm foundation for this study's theoretical framework and be capable of justifying its research problem. Consequently, based on the findings and justifications, this study achieved its objectives and

responded to the research questions and aims. The findings generally supported the existing KBV theory.

The present research seems to revise the smaller sub-sectors of Malaysian manufacturing firms. Future research may concentrate on specific sub-sectors, particularly those in which Malaysia demonstrates excellence, with the aim of enhancing global competitiveness. Several manufacturing sectors that are highly competitive and widely recognized, apart from Malaysia, include Guangdong, Zhejiang, and Jiangsu in China, Bharuch and Ludhiana in India, and special economic zones (SEZs) in Indonesia. The aforementioned manufacturing hubs have been recommended as significant contributors to research on manufacturing in Asia.

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